



PATENT APPLICATION
Serial No. 10/009,640
Atty. Docket No.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit 1752 :
In re application of : LITHOGRAPHIC PRINTING PLATE
Hiroshi MASE et al. :
Serial No. 10/009,640 :
Filed December 14, 2001 :
Examiner Barbara L. Gilliam :

DECLARATION UNDER 37 CFR § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Takayuki SANADA, hereby declare as follows:

That I have graduated from a master course of Osaka University in 1998, and been employed in Mitsui Chemicals Inc. in April of 1998, and assigned immediately to a Process Technology Laboratory and concerned with a development of a lithographic printing plate since 1999.

That I am one of the named inventors of the invention described and claimed in the above-identified patent application.

That I have read and am familiar with the above-identified patent application and the references cited by the Examiner, i.e., U.S. Patent No. 6,230,621 to Verschueren et al. (hereinafter "Verschueren"), U.S. Patent No. 6,190,830 to Leon et al. (hereinafter "Leon") and U.S. Patent No. 6,096,471 to Van Damme et al. (hereinafter "Van Damme").

That I carried out the following Experiments to be able to fully understand the present invention by the Examiner and believe them to be valuable.

REPORT OF EXPERIMENTS

1. Object of the Experiments

To prove that the introduction of additional component, i.e., 50 to 95% by weight of metal oxide particles as an essential component used in U. S. Patent No. 6,230,621 to Verschueren, materially changes the characteristics of the claimed invention as well as no notable effect can be obtained by the introduction of the additional component.

2. Method and Results of the Experiments

Printing original plates were prepared by adding TiO₂ particles to the photosensitive composition obtained by Example 1 (support for claim 2) and Example 20 (support for claim 3), respectively and evaluated in its printing performance.

TiO₂ used was TITANIX JR301 manufactured by TAYCA Corporation and having a particle diameter of 0.3 μ m (hereinafter the same TiO₂ was used through the Experiments).

(1) Experiment 1 (TiO₂ addition to the photosensitive composition of Example 1)

Preparation of TiO₂ suspension

In a 150 ml plastic cup, 75.0 g of water was placed, and 25.0 g of TITANIX JR301 was added with stirring by a disperser to prepare a TiO₂ suspension.

Synthesis of hydrophilic polymer

In accordance with Example 1, acrylamide/acrylic acid copolymer was synthesized and an aqueous solution of a hydrophilic polymer was prepared.

Preparation of photosensitive composition

In a 200 ml plastics cup, 25.03 g of thus prepared acrylamide/acrylic acid copolymer (solid content 15%) as a hydrophilic polymer was placed with stirring by a disper, and subsequently 1.58 g of CYMEL-701 (methoxymethyl melamine resin, solid content 82%), 0.05 g of paratoluenesulfonic acid (solid content 100%), 10.05 g of IR-125 aqueous solution (cyanine dye, solid content 5%) and 20.01 g of thus prepared TiO₂ suspension (solid content 25%) was added to prepare a photosensitive composition.

Preparation of printing original plate

A PET film having a thickness of 0.188 μ m manufactured by TEIJIN Limited was coated with the thus prepared photosensitive composition with the use of wirebar #14 and the composition was dried to harden for 3 hours at 120°C (FV-800 dryer manufactured by ADVENTEC).

Printing and evaluation

The original plate was scan-irradiated with a semiconductor laser beam of a wavelength of 830 nm with focusing the beam so that the irradiation energy density became 300mJ/cm² using a PT-R8000II exposure machine manufactured by DAINIPPON SCREEN MFG. CO., LTD.

The exposed plate was set in an offset printing press (SPRINT26 manufactured by KOMORI Corporation) using a fountain solution, and printing of 1000 sheets was carried out (an ink; VALUES-G manufactured by DAINIPPON INK AND CHEMICALS, INC. and a fountain solution; 2% aqueous solution of ASTRO MARK 3 manufactured by NIKKEN CHEMICAL LABORATORY CO., LTD.).

As a result, all the unirradiated area was stained as well as an ink was not received on the irradiated area at all and the recorded image was not reproduced on the printing paper.

(2) Experiment 2 (TiO₂ addition to the photosensitive composition of Example 20)

Preparation of TiO₂ suspension

In a 150 ml plastic cup, 75.0 g of water was placed, and 25.0 g of TITANIX JR301 was added with stirring by a disperser to prepare a TiO₂ suspension.

Synthesis of hydrophilic polymer

In accordance with Example 20, acrylamide/hydroxyethyl methacrylate copolymer (weight ratio 85/15) was synthesized and an aqueous solution of a hydrophilic polymer was prepared.

Preparation of photosensitive composition

In a 500 ml plastic cup, 28.77 g of OLESTER UD350 (solid content 39%) was placed with stirring by a disperser, and subsequently 59.96 g of thus prepared acrylamide/hydroxyethyl methacrylate copolymer (solid content 15%) as a hydrophilic polymer, 2.91 g of CYMEL-385 (methoxymethyl melamine resin, solid content 80%), 0.20 g of paratoluenesulfonic acid (solid content 100%), 44.92 g of IR-125 aqueous solution (cyanine dye, solid content 5%), 0.1 g of NEOCOL YSK (solid content 70%) and 99.9 g of thus prepared TiO₂ suspension (solid content 25%) was added to prepare a photosensitive composition.

Preparation of printing original plate

A PET film having a thickness of 0.188 μ m manufactured by TEIJIN Limited was coated with the thus prepared photosensitive composition with the use of wirebar #14 and

the composition was dried to harden for 15 minutes at 120°C (FV-800 dryer manufactured by ADVENTEC).

Printing and evaluation

The original plate was scan-irradiated with a semiconductor laser beam of a wavelength of 830 nm with focusing the beam so that the irradiation energy density became 200mJ/cm² using a PT-R8000II exposure machine manufactured by DAINIPPON SCREEN MFG. CO., LTD.

The exposed plate was set in an offset printing press (SPRINT26 manufactured by KOMORI Corporation) using a fountain solution, and printing of 1000 sheets was carried out (an ink; VALUES-G manufactured by DAINIPPON INK AND CHEMICALS, INC. and a fountain solution; 2% aqueous solution of ASTRO MARK 3 manufactured by NIKKEN CHEMICAL LABORATORY CO., LTD.).

As a result, many spotted-stain occurred on the unirradiated area as well as an ink spattered on the irradiated area and the only stained image was reproduced on the printing paper.

3. Consideration of the Experiments

As a result of the Experiments, it is understood that the incorporation of metal oxide particles in the photosensitive composition of the present invention materially changes the characteristics of the claimed invention and proved that it is unnecessary and useless component for the claimed invention.

That the undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false

statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Date September 9, 2005 Inventor Takayuki Sanada
[Name of Inventor]